## WHAT IS CLAIMED IS

1. An actuator comprising: a base member; a first displacing device held on the base member and displacing by supplying of electric power; a second displacing device held on the base member and displaceable; a compound member connected to the first and second displacing devices; and a driver for supplying electric power to the first displacing member in a manner so that the compound member moves along an elliptic or a circular trail.

2. The actuator in accordance with claim 1, further comprising a pressing member for generating a pressure for pressing the compound member to an object to be driven.

3. The actuator in accordance with claim 1, wherein a frequency f of driving signals is shown by the following equations;

$f=\omega/2\pi$

$\omega^2=2\omega_{n1}^2\cdot\omega_{n2}^2\cdot(1-2\zeta^2)/(\omega_{n1}^2+\omega_{n2}^2)$

$\omega_{n1}$: a natural frequency of the first displacing device in the same phase mode

$\omega_{n2}$: a natural frequency of the first displacing device in the opposite phase mode

$\zeta$ : a damping ratio of the displacing device.

4. The actuator in accordance with claim 1, wherein the first displacing device includes an elastic member provided at a portion thereof.

5. The actuator in accordance with claim 4, wherein the second displacing device includes an elastic member provided at a

portion thereof.

6. The actuator in accordance with claim 1, wherein the first displacing device includes a piezoelectric device as a driving source.

7. The actuator in accordance with claim 6, further comprising a voltage sensor for sensing a voltage generated by the second displacing device when the second displacing device is vibrated by vibrations transmitted from the first displacing device; and a vibration sensor for sensing vibrating state of the first displacing device by using the voltage sensed by the voltage sensor.

8. The actuator in accordance with claim 7, wherein at least one of an amplitude and a frequency of driving signals applied to the first displacing device is controlled corresponding to the vibration state sensed by the vibration sensor.

9. An actuator comprising: a base member; a first displacing device held on the base member and displacing by supplying of electric power; a second displacing device held on the base member and displacing by supplying of electric power; a compound member connected to the first and second displacing devices; and a driver for supplying electric power to the first displacing member in a manner so that the compound member moves along an elliptic or a circular trail and supplying no electric power to the second displacing member while the electric power is supplied to the first displacing member.

10. The actuator in accordance with claim 9, further comprising a pressing member for generating a pressure for pressing the compound member to an object to be driven.

11. The actuator in accordance with claim 9, wherein a frequency f of driving signals is shown by the following equations;

$f=\omega/2\pi$

$\omega^2=2\omega_{n1}^2\cdot\omega_{n2}^2\cdot(1-2\zeta^2)/(\omega_{n1}^2+\omega_{n2}^2)$

$\omega_{n1}$: a natural frequency of the first displacing device in the same phase mode

$\omega_{n2}$: a natural frequency of the first displacing device in the opposite phase mode

$\zeta$ : a damping ratio of the displacing device.

12. The actuator in accordance with claim 9, wherein the first displacing device includes an elastic member provided at a portion thereof.

13. The actuator in accordance with claim 12, wherein the second displacing device includes an elastic member provided at a portion thereof.

14. The actuator in accordance with claim 9, wherein the first displacing device includes a piezoelectric device as a driving source.

15. The actuator in accordance with claim 14, further comprising a voltage sensor for sensing a voltage generated by the second displacing device when the second displacing device is vibrated by vibrations transmitted from the first displacing device; and a vibration sensor for sensing vibrating state of the first displacing device by using the voltage sensed by the voltage sensor.

16. The actuator in accordance with claim 15, wherein at least one of an amplitude and a frequency of driving signals applied to

the first displacing device is controlled corresponding to the vibration state sensed by the vibration sensor.

17. An actuator comprising: a plurality of displacing devices for generating a displacement; a compound member connected to the displacing devices and for compounding displacements of the displacing devices; a base member for folding base ends of the displacing devices at which the compound member is not fixed; a pressing member for pressing the compound member to an object to be driven; and a driver selectively for driving one of the displacing device; and wherein vibrations of a selected first displacing device are transmitted to a non-selected second displacing device so as to vibrate the second displacing device for moving the compound member along an elliptic or a circular trail.

18. The actuator in accordance with claim 17, wherein the selected displacing device is driven in a manner so that a trail of the compound member under no-load is a circle and the trail is restricted to semicircle when it is pressed to the object by the pressing member.

19. The actuator in accordance with claim 17, wherein the selected displacing device is driven by driving signals having a frequency $f_3=(f_1+f_2)/2$;

hereupon the frequency $f_1$ is a resonance frequency of the displacing device in the same phase mode in which two displacing devices are expansively vibrated in the same phase; the frequency $f_2$ is a resonance frequency of the displacing device in the opposite phase mode in which two displacing devices are expansively vibrated in the

opposite phase; and the frequency $f_3$ is a frequency for expansively vibrating two displacing devices with a phase difference of 90 degrees.

20. The actuator in accordance with claim 17, wherein the first displacing device and the second displacing device include a piezoelectric device; and vibration state of the first displacing device is sensed by output voltage of the piezoelectric device of the second displacing device.